TABLE 17 – STATE GOVERERNMENT FLEETS

Texas Department of Transportation Alternative Fuels Program

Over the past decade energy security and environmental concerns have become prominent incentives for transportation policy and planning. Dependence on foreign oil supplies and fear of urban pollution and global warming have led to a nationwide trend away from petroleum based modes of transportation.

Since motor vehicles are the largest single form of mobile-source pollution, a number of initiatives have been undertaken to replace petroleum fueled vehicles with alternative fueled vehicles.

The Clean Air Act Amendment of 1990 (CAAA 1990) became the primary driver to move the nation away from petroleum based fuels. The CAAA became law after 11 years of deliberation. The law establishes twenty-one areas throughout the United States in nonattainment of National Ambient Air Quality Standards. By mandating that these areas come into compliance, the Amendment provides a strong impetus for use of low emission alternative fuels.

The Energy Policy Act of 1992 reinforced the intent of CAAA 1990 by mandating specific milestones for governmental fleets in the use of alternative fuel vehicles. Individual state legislation continues to increase the requirement for the use of alternative fuels.

Texas produces more than five trillion cubic feet of natural gas per year, 30% of total U.S. production One trillion cubic feet of natural gas can power eight million vehicles Texas produces close to five billion barrels of propane each year. Texas is not only a major producer of natural gas but also provides a large portion of the nation's liquefied petroleum gas (LPG, commonly referred to as propane) supply.

Texas Senate Bills 740, 269 and 200, enacted in 1991 and 1995, affecting state agencies, school districts and metropolitan transit authorities, require the use of alternative fuels in some fleet motor vehicles. This use of the vast natural gas reserves and propane production available within Texas is helping to reduce harmful exhaust emissions and dependence on foreign petroleum imports. This legislation required all vehicles purchased by state agencies with large motor vehicle fleets to be alternative fuel vehicles (AFVs).

Senate Bill 200 made changes to the Texas Health and Safety Code which requires the use of any alternative fuel that meets low emission vehicle (LEV) standards, as defined in the Federal Clean Air Act as amended. It allows the use of: natural gas, in either compressed (CNG) or liquid form (LNG); liquefied petroleum gas (LPG); electricity; ethanol and methanol. Some municipalities are also allowed to use reformulated gasoline, a cleaner burning gasoline blend. This legislation also required state agency fleets to have 50% of their affected fleet capable of operating on alternative fuels by September 1, 1996.

The Alternative Fueling Infrastructure Is At Different Stages of Development

CNG: Except for major metropolitan areas such as Dallas-Ft. Worth, Houston and Austin, the CNG fueling infrastructure has been slow to develop. TxDOT has assisted in developing the CNG fueling infrastructure in Houston by allowing CNG providers to place public access CNG fueling stations on TxDOT property. This "land for fuel" concept has resulted in three public access CNG fueling stations being located on TxDOT property.

LPG: The fueling infrastructure for LPG, or propane, is very well developed in Texas with more than 2,000 providers. Fueling with propane is relatively convenient; however, the lack of a universal payment process across the state hinders state agencies from making maximum use of the fuel when traveling.

The impact of state legislation upon TxDOT is extensive. 9,400 vehicles are affected. The Alternative Fuels Group within the General Services Division was created to assist the department in meeting these legislatively mandated goals. This group assists districts and divisions in managing one of the largest alternatively fueled fleets in the country.

TxDOT currently operates more than 5,000 alternative fuel vehicles running on CNG or propane. So far during FY 1998 the department has placed orders for more than 500 vehicles, of which more than 50 are alternative fuel vehicles straight from the original equipment manufacturer (OEM). The remaining are scheduled for after-market conversion as approved systems become available.

Alternative Fuel Usage

TxDOT's alternative fuel program, initiated in 1991, began to see results in Fiscal Year 1992 when approximately 21,000 equivalent gallons of alternative fuel, either compressed natural gas (CNG) or liquefied petroleum gas (LPG), were used.

Usage increased tenfold in 1993 and quadrupled in 1994, to more than 847,000 gallons of alternative fuel used. In 1995 TxDOT used more than 2.1 million gallons of alternative fuel, in FY1996 more than 3.1 million gallons, and more than 3.6 million in FY1997. In fiscal year 1993, alternative fuel usage was 227,762 gallons and increased to a high of approximately 3.6 million in fiscal year 1997. The usage in fiscal year 1998 was 3,500,901 million gallons. Some TxDOT districts are using alternative fuel 86% of the time.

Alternative Fuel Vehicle Purchases

TxDOT implements four primary procurement methods for increasing the size of the alternative fuel fleet:

- Purchase OEM AFVs
- Allow OEM dealers to convert vehicles
- Purchase after-market conversions
- Buy the components and convert in-house

Currently, the most desirable solution for TxDOT is to procure OEM vehicles in locations where dealer repair services are available. After-market conversions must fill the remaining gap.

Alternative Fuel Vehicle Conversions

According to new guidance from the U.S. Environmental Protection Agency (EPA), after-market conversions under the less stringent Memorandum 1A will be allowed for model year 1998 and 1999. Full EPA or California emission certification will be required beginning with model year 2000 vehicles.

New and rapidly changing technology has made it more difficult for after-market conversion vendors to develop reliable systems without the assistance of the original equipment manufacturers (OEMs). Partnerships between conversion system manufacturers and vehicle OEMs have emerged to solve equipment compatibility issues such as the on-board-diagnostics (OBD II).

TxDOT currently operates more than 400 OEM alternative fuel vehicles which were converted by OEM authorized vendors. In some TxDOT districts these vehicles use alternative fuel more than 80% of the time. TxDOT has ordered more than 50 next-generation alternative fuel vehicles during the 1998 model-year. These alternative fuel vehicles have the potential to considerably improve the air quality within Texas' four non-attainment areas of Beaumont-Port Arthur, Houston-Galveston, Dallas-Ft. Worth and El Paso.